KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

VP-690

Presentation Switcher/Scaler

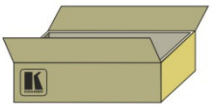
P/N: 2900-000704 Rev 3

VP-690 Quick Start Guide

This guide takes you through a basic installation and first-time use of your **VP-690**.
For more detailed information, see the **VP-690** user manual. You can download the latest manual at http://www.kramerelectronics.com.

Step 1: Check what's in the box

- The **VP-690** Presentation Switcher Scaler
- IR remote control transmitter with batteries
- 1 Power cord
- 1 Set of rack ears
- 4 Rubber feet
- 1 Quick start guide
- 1 User Manual

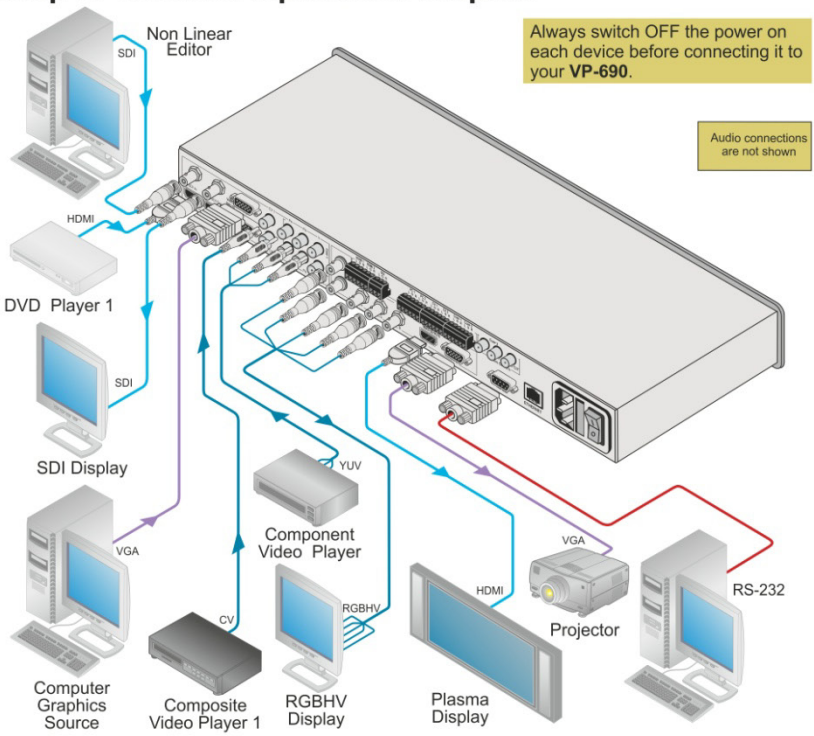


Save the original box and packaging materials in case your Kramer product needs to be returned to the factory for service.

Step 2: Install the VP-690

Mount the machine in a rack or place on a table.

Step 3: Connect inputs and outputs



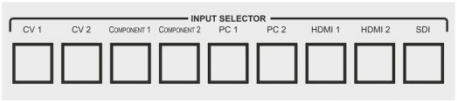
For best results, we recommend that you always use Kramer high-performance cables to connect AV equipment to the **VP-690**.

Step 4: Connect the power

Connect AC power to the rear of the **VP-690**, switch on its power and then switch on the power on each device.

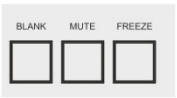
Step 5: Operate via the front panel buttons and the remote control transmitter

Push the MENU button to access the menu and show the main menu on your display.

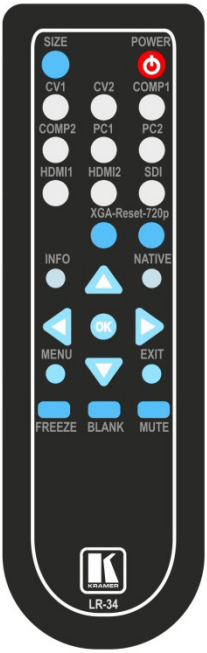


Select an input

Press the MENU button to access the menu.The arrow buttons and ENTER (OK) button let you navigate within the OSD menu. Press EXIT to exit the menu.



Toggle between blank and display.
Toggle between mute and the audio output.
Freeze/unfreeze the output image.



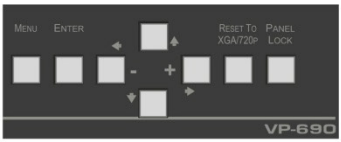
POWER
Cycles power

Reset the output resolution

If you cannot see an image, verify that the output cable to your display, TV, or projector is in good working order and is connected to the **VP-690** and/or reset the output resolution.

Step 6: Configure the VP-690 via the OSD menu

Press the MENU button to open the OSD menu:



CONTRAST
BRIGHTNESS
FINETUNE
COLOR
SIZE
SOURCE
OUTPUT
AUDIO
OSD
FACTORY RESET
INFORMATION
AUTOSYNC
EXIT

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1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 11 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters and GROUP 11: Sierra Products.

Congratulations on purchasing your Kramer **VP-690** Presentation Switcher/Scaler. This product, which incorporates HDMI™ technology, is ideal for:

- Projection systems in conference rooms, boardrooms, hotels and churches
- Home theater up-scaling

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual

  Use Kramer high performance high resolution cables
  Use only the power cord that is supplied with this machine

Go to http://www.kramerelectronics.com to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality
- Position your Kramer **VP-690** away from moisture, excessive sunlight and dust

3 Overview

The Kramer **VP-690** is a high quality presentation switcher and scaler. It accepts one of nine inputs: one SD/HD/3G-HD SDI signal, two HDMI signals, two computer graphics signals on 15-pin HD connectors, two composite video signals on RCA connectors and two component video (also known as Y, Pb, Pr, Y, Cb, Cr and YUV; compatible with both SD and HD component) signals on RCA connectors. It scales the video, embeds the audio, and outputs the signal to the HDMI output as well as to a computer graphics output and an RGBHV video output together with a digital audio output and an analog stereo audio output.

The **VP-690** Presentation Switcher/Scaler:

- Has a video bandwidth of up to 2.97Gbps
- Is SMPTE 259M, 292M and 424M compliant
- Is HDTV compatible and the resolution can be up- or down-scaled

  The resolutions which can be selected include: 480i, 480p, 576i, 576p, 720p, 1080i, 1080p, WXGA, WSXGA, WUXGA, NATIVE, VGA, SVGA, XGA, SXGA UXGA, 1280x800, WXGA+, 1600x900, 2048x1080@50 and 2048x1080@60
- Is HDCP Compliant - The HDCP (High Definition Content Protection) license agreement allows copy-protected data on the HDMI input to pass only to the HDMI output
- Has analog audio inputs which include volume control, and digital (S/PDIF) and analog stereo audio outputs
- Automatically detects and selects the audio source for the HDMI input. Default selection is HDMI – if this is not present, then the machine uses the audio from the analog input
- Comes with an On-Screen Display (OSD) for easy setup and adjustment, accessible via the IR remote control and via the front-panel buttons
- Has a non-volatile memory that retains the last settings used
- Supports firmware upgrade via RS-232

Control your **VP-690**:

- Directly, via the front panel push buttons
- By RS-232 serial commands transmitted by a touch screen system, PC, or other serial controller
- Remotely, from the infrared remote control transmitter
- Via the Ethernet

The **VP-690** is housed in a 19" 1U rack mountable enclosure, with rack "ears" included, and is fed from a 100-240V AC universal switching power supply.

3.1 About HDMI—General Description

High-Definition Multimedia Interface (HDMI) is an uncompressed all-digital audio/video interface, widely supported in the entertainment and home cinema industry. HDMI ensures an all-digital rendering of video without the losses associated with analog interfaces and their unnecessary digital-to-analog conversions. It delivers the maximum high-definition image and sound quality in use today. Note that Kramer Electronics Limited is an HDMI Adopter and an HDCP Licensee.

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC.

In particular, HDMI:

- Provides a simple interface between any audio/video source, such as a set-top box, DVD player, or A/V receiver and video monitor, such as a digital flat LCD / plasma television (DTV), over a single lengthy cable

  SIMPLICITY - With video and multi-channel audio combined into a single cable, the cost, complexity, and confusion of multiple cables currently used in A/V systems is reduced

  LENGTHY CABLE - HDMI technology has been designed to use standard copper cable construction at up to 15m

- Supports standard, enhanced, high-definition video, and multi-channel digital audio on a single cable

  MULTI-CHANNEL DIGITAL AUDIO - HDMI supports multiple audio formats, from standard stereo to multi-channel surround-sound. HDMI has the capacity to support Dolby 5.1 audio and high-resolution audio formats

- Transmits all ATSC HDTV standards and supports 8-channel digital audio, with bandwidth to spare to accommodate future enhancements and requirements
- Benefits consumers by providing superior, uncompressed digital video quality via a single cable, and user-friendly connector

  HDMI provides the quality and functionality of a digital interface while also supporting uncompressed video formats in a simple, cost-effective manner
- Is backward-compatible with DVI (Digital Visual Interface)
- Supports CEC, two-way communication between the video source (such as a DVD player) and the digital television, enabling new functionality such as automatic configuration and one-button play
- Has the capacity to support existing high-definition video formats (720p, 1080i, and 1080p, 2K and 4K), standard definition formats such as NTSC or PAL, as well as 480p and 576p

3.2 About HDCP

The High-Bandwidth Digital Content Protection (HDCP) standard developed by Intel, protects digital video and audio signals transmitted over DVI or HDMI connections between two HDCP-enabled devices to eliminate the reproduction of copyrighted material. To protect copyright holders (such as movie studios) from having their programs copied and shared, the HDCP standard provides for the secure and encrypted transmission of digital signals.

3.3 Defining the VP-690 Presentation Switcher/Scaler

This section defines the **VP-690**.

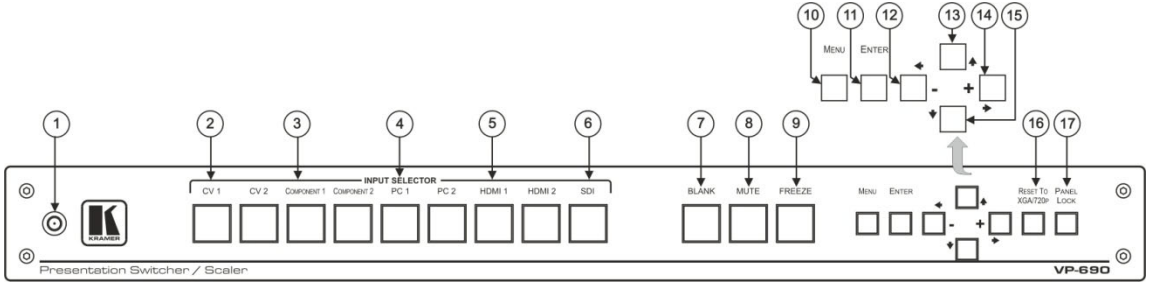


Figure 1: VP-690 Presentation Switcher/Scaler Front Panel

#	Feature		Function
1	*IR* Receiver		Receives signals from the remote control transmitter
2	INPUT SELECTOR Buttons	CV	Press to select the composite video input (from 1 to 2)
3		COMPONENT	Press to select the component video input (from 1 to 2)
4		PC	Press to select the computer graphics input (from 1 to 2)
5		HDMI	Press to select the HDMI input (from 1 to 2)
6		SDI	Press to select the SDI input
7	*BLANK* Button		Press to toggle between a blank screen (blue or black screen) and the display
8	*MUTE* Button		Press to toggle between muting (blocking out the sound) and enabling the audio output
9	*FREEZE* Button		Press to freeze/unfreeze the output video image Can be programmed to follow MUTE (see Section 6.2.3)
10	*MENU* Button		Displays the OSD menu (see Section 6.2)
11	ENTER Button		Press to accept changes and change the SETUP parameters (see Section 6.2)
12	- ⬅ Button		Press to decrease numerical values or select from several definitions. For convenience and speed—when not working in the OSD—press to reduce volume
13	⬆ Button		Press to move up the menu list values (see Section 6.2)
14	+ ➡ Button		Press to increase numerical values or select from several definitions. For convenience and speed—when not working in the OSD—press to increase volume
15	⬇ Button		Press to move down the menu list(see Section 6.2)
16	RESET TO XGA/720p Button		Press to reset the video resolution to XGA or 720p Press and hold for about 2 seconds to reset to XGA; or press and hold for about 5 seconds to reset to 720p
17	PANEL LOCK Button		Press and hold (for about 2 seconds) to lock/unlock the front panel buttons

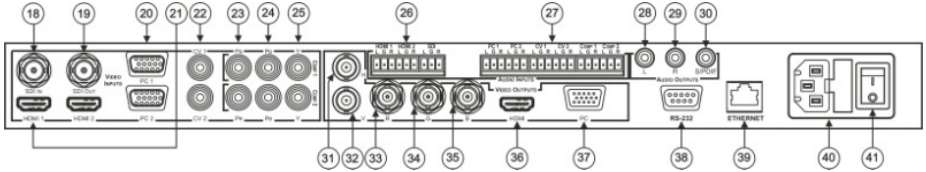


Figure 2: VP-690 Presentation Switcher/Scaler Rear Panel

#	Feature		Function
18	VIDEO INPUT Connectors	*SDI IN* BNC	Connect to the SDI source
19		*SDI OUT* BNC	Connect to an SDI acceptor (loop output for the SDI input)
20		*PC* 15-pin HD	Connect to the computer graphics source (from 1 to 2)
21		*HDMI*	Connect to the HDMI source (from 1 to 2)
22		*CV* RCA	Connect to the composite video source (from 1 to 2)
23		*COMP PR* RCA	Connect to the component video source (from 1 to 2)
24		*COMP PB* RCA	
25		*COMP Y* RCA	
26	*AUDIO INPUTS* Unbalanced Stereo Terminal Block Connectors	HDMI	Connect to the analog audio HDMI source (from 1 to 2)
		SDI	Connect to the analog audio SDI source
27		PC	Connect to the analog audio computer graphics source (from 1 to 2)
		CV	Connect to the analog audio composite video source (from 1 to 2)
		COMP	Connect to the analog audio component video source (from 1 to 2)
28	AUDIO OUTPUTS RCA Connectors	L	Connect to the left stereo analog audio acceptor
29		R	Connect to the right stereo analog audio acceptor
30		S/PDIF	Connect to a digital audio acceptor
31	VIDEO OUTPUT Connectors	*H* BNC	Connect to the RGBHV video acceptor
32		*V* BNC	
33		*R* BNC	
34		*G* BNC	
35		*B* BNC	
36		HDMI	Connect to the HDMI acceptor
37		*PC* 15-pin HD	Connect to a VGA acceptor
38	*RS-232* 9-pin D-sub Port		Connect to the PC or the remote controller
39	*ETHERNET* Connector		Connects to the PC or other Serial Controller through computer networking
40	Power Connector with Fuse		AC connector, enabling power supply to the unit
41	*POWER* Switch		Illuminated switch for turning the unit ON or OFF

4 Installing in a Rack

This section provides instructions for rack mounting the unit.

Before installing in a rack, be sure that the environment is within the recommended range:

OPERATING TEMPERATURE:	0º to +55ºC (32º to 131ºF)
STORAGE TEMPERATURE:	-45º to +72ºC (-49º to 162ºF)
HUMIDITY:	10% to 90%, RHL non-condensing

CAUTION!

When installing on a 19" rack, avoid hazards by taking care that:

1. It is located within the recommended environmental conditions, as the operating ambient temperature of a closed or multi unit rack assembly may exceed the room ambient temperature.

2. Once rack mounted, enough air will still flow around the machine.

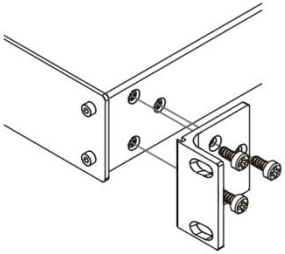
3. The machine is placed straight in the correct horizontal position.

4. You do not overload the circuit(s). When connecting the machine to the supply circuit, overloading the circuits might have a detrimental effect on overcurrent protection and supply wiring. Refer to the appropriate nameplate ratings for information. For example, for fuse replacement, see the value printed on the product label.

5. The machine is earthed (grounded) in a reliable way and is connected only to an electricity socket with grounding. Pay particular attention to situations where electricity is supplied indirectly (when the power cord is not plugged directly into the socket in the wall), for example, when using an extension cable or a power strip, and that you use only the power cord that is supplied with the machine.

To rack-mount a machine:

1. Attach both ear brackets to the machine. To do so, remove the screws from each side of the machine (3 on each side), and replace those screws through the ear brackets.



2. Place the ears of the machine against the rack rails, and insert the proper screws (not provided) through each of the four holes in the rack ears.

Note:

- In some models, the front panel may feature built-in rack ears
- Detachable rack ears can be removed for desktop use
- Always mount the machine in the rack before you attach any cables or connect the machine to the power
- If you are using a Kramer rack adapter kit (for a machine that is not 19"), see the Rack Adapters user manual for installation instructions available from our Web site

5 Connecting the VP-690

Always switch off the power to each device before connecting it to your **VP-690**. After connecting your **VP-690**, connect its power and then switch on the power to each device.

You do not have to connect all the inputs and outputs, connect only those that are required.

To connect the **VP-690**, as illustrated in the example in Figure 3, do the following:

1. Connect an SDI source (for example, a non linear editor) to the SDI IN BNC connector.
2. Connect the SDI OUT BNC connector to an SDI acceptor (for example, an SDI display).
3. Connect an HDMI source (for example, a DVD player) to the HDMI 1 VIDEO INPUT connector.
   Alternatively, you can connect the DVI connector on the DVD player to the HDMI connector on the **VP-690** via a DVI-HDMI adapter. When using this adapter, you can connect the audio signal via the terminal block connector
4. Connect a computer graphics source to the PC 1 15-pin HD VIDEO INPUT connector.
5. Connect a composite video source (for example, a composite video player) to the CV 1 VIDEO INPUT RCA connector.
6. Connect a component video source (for example, a component video player) to the COMP 1 P_R, P_B and Y, VIDEO INPUT RCA connectors.
7. Connect the audio input signals to the AUDIO INPUT terminal block connectors, as required (not shown in Figure 3).
8. Connect the RGBHV VIDEO OUTPUT BNC connectors to an RGBHV acceptor (for example, an RGBHV display).

9. Connect the HDMI VIDEO OUTPUT connector to an HDMI acceptor (for example, a plasma display).

10. Connect the VGA VIDEO OUTPUT 15-pin HD connector to a VGA acceptor (for example, a projector).

11. Connect the audio output signals to the AUDIO OUTPUTS stereo analog audio acceptor and/or the digital audio acceptor, as required (not shown in Figure 3).

12. Connect the power cord (not shown in Figure 3).

13. If required, connect:

    - A PC via RS-232, see Section 6.3
    - The ETHERNET port, see Section 6.4

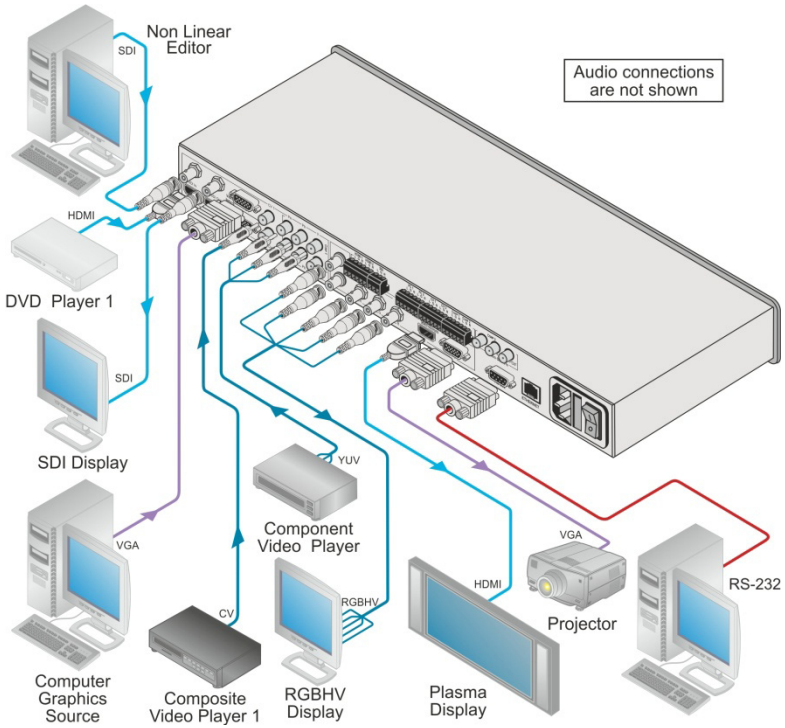


Figure 3: Connecting the VP-690 Presentation Switcher/Scaler

6 Controlling the VP-690

The **VP-690** can be controlled via:

- The front panel buttons (see Section 6.1)
- The OSD menu (see Section 6.2)
- RS-232 serial commands transmitted by a touch screen system, PC, or other serial controller (see Section 6.3)
- The ETHERNET (see Section 6.4)
- The infrared remote control transmitter (see Section 6.5)

6.1 Controlling via the Front Panel Buttons

The **VP-690** includes the following front panel buttons:

- Input selector buttons for selecting the required input: CV (1 and 2), COMPONENT (1 and 2), PC (1 and 2), HDMI (1 and 2), or SDI
- BLANK, MUTE and FREEZE buttons
- MENU, ENTER, and arrow buttons (up, down, left and right)
- RESET TO XGA/720p and PANEL LOCK buttons

6.2 Using the OSD Menu

The control buttons let you control the **VP-690** via the OSD menu.

Press the:

- MENU button to enter the menu
  The default timeout is set to 10 seconds
- ENTER button to accept changes and to change the menu settings
- Arrow buttons to move through the OSD menu, which is displayed on the video output

On the OSD menu, select EXIT to exit the menu.

6.2.1 The MAIN MENU

<table>
<tr><th>Mode</th><th>Function</th></tr>
<tr><td>CONTRAST</td><td>Set the contrast
The range and default values vary according to the input signal</td></tr>
<tr><td>BRIGHTNESS</td><td>Set the brightness
The range and default values vary according to the input signal</td></tr>
<tr><td>FINETUNE</td><td>(see Section 6.2.2)</td></tr>
<tr><td>COLOR</td><td>Set the red, green and blue shades</td></tr>
<tr><td>SIZE</td><td>Select the size of the display: FULL, OVERSCAN, UNDER1, UNDER2, LETTER BOX, PANSCAN (default, FULL)
UNDER1 refers to an underscan of 6% and UNDER2 refers to an underscan of 9%</td></tr>
<tr><td>SOURCE</td><td>Select the source (default VGA):
<table>
<tr><th>Source input</th><th>Appears as:</th><th>Source input</th><th>Appears as:</th></tr>
<tr><td>CV 1</td><td>AV1</td><td>VGA 2</td><td>PC 2</td></tr>
<tr><td>CV 2</td><td>AV2</td><td>HDMI 1</td><td>HDMI 1</td></tr>
<tr><td>COMP 1</td><td>YPBPR 1</td><td>HDMI 2</td><td>HDMI 2</td></tr>
<tr><td>COMP 2</td><td>YPBPR 2</td><td>SDI</td><td>SDI</td></tr>
<tr><td>VGA 1</td><td>PC 1</td><td></td><td></td></tr>
</table></td></tr>
<tr><td>OUTPUT</td><td>Select the output resolution from the menu (default NATIVE):
<table>
<tr><th>Output resolution:</th><th>Appears as:</th><th>Output resolution:</th><th>Appears as:</th></tr>
<tr><td>480i</td><td>480I</td><td>1024x768</td><td>XGA</td></tr>
<tr><td>480p</td><td>480P</td><td>1280x1024</td><td>SXGA</td></tr>
<tr><td>720p @50Hz</td><td>720P60</td><td>1600x1200</td><td>UXGA</td></tr>
<tr><td>1080i @60Hz</td><td>1080I60</td><td>1366x768</td><td>WXGA</td></tr>
<tr><td>1080p @60Hz</td><td>1080P60</td><td>1680x1050</td><td>WSXGA</td></tr>
<tr><td>576i</td><td>576I</td><td>1920x1200</td><td>WUXGA</td></tr>
<tr><td>576p</td><td>576P</td><td>1280x800</td><td>1280x800</td></tr>
<tr><td>720p @50Hz</td><td>720P50</td><td>1440x900</td><td>WXGA+</td></tr>
<tr><td>1080i @50Hz</td><td>1080I50</td><td>1400x1050</td><td>SXGA+</td></tr>
<tr><td>1080p @50Hz</td><td>1080P50</td><td>2048x1080@50</td><td>2K50</td></tr>
<tr><td></td><td>NATIVE</td><td>2048x1080@60</td><td>2K60</td></tr>
<tr><td>640x480</td><td>VGA</td><td>1600x900</td><td>1600x900</td></tr>
<tr><td>800x600</td><td>SVGA</td><td></td><td></td></tr>
</table>
Select “NATIVE” to select the output resolution from the EDID of the connected HDMI monitor</td></tr>
<tr><td>AUDIO</td><td>See Section 6.2.3</td></tr>
<tr><td>OSD</td><td>Set the OSD parameters: H POSITION, V POSITION, TIMER, BACKGROUND and DISPLAY (see Section 6.2.4)</td></tr>
<tr><td>FACTORY RESET</td><td>Resets to the default parameters (the resolution is set to XGA or 720p)
If you cannot see the display after factory reset, use the front panel Res. button to set the correct resolution: press continuously for 2 seconds to reset to XGA, or continuously for 5 seconds to reset to 720p</td></tr>
<tr><td>INFORMATION</td><td>Displays the source, the input resolution, the output resolution and the software version</td></tr>
<tr><td>AUTO SYNC</td><td>Turn the auto sync ON/OFF. When ON, a short period after not detecting a valid video signal on the selected input, the unit will disable the H and V syncs on the analog outputs until a valid input is again detected</td></tr>
<tr><td>EXIT</td><td>Select to exit the menu</td></tr>
</table>

6.2.2 The FINETUNE Menu

Input Signal	Parameter	Function
CV, COMPONENT	HUE	Set the color hue
	SATURATION	Set the color saturation
	SHARPNESS	Set the sharpness of the picture
	NOISE REDUCTION	Select the noise reduction: OFF, HI, LOW and MID (middle)
	COLOR FILTER	Set to ON to enable color filtering
VGA	PHASE	Set the clock phase
	CLOCK	Set the clock frequency
	H-POSITION	Set the horizontal position of the picture
	V-POSITION	Set the vertical position of the picture
	AUTO TUNE	When set to ON, auto adjusts the image (centers it correctly on the screen) every time the input is switched to VGA or when the input resolution changes
	COLOR FILTER	Set to ON to enable color filtering
HDMI	COLOR FILTER	Set to ON to enable color filtering

COLOR FILTER may improve the output image for certain graphic cards where color fringing is seen.

6.2.3 The AUDIO Menu

Parameter	Function
OUTPUT VOLUME	Set the output volume (from 0 to 100) Not applicable for embedded HDMI and SDI audio inputs
INPUT VOLUME	Set the input volume (from 0 to 100) Not applicable for embedded HDMI and SDI audio inputs
DELAY	Select the audio delay time: OFF, 40ms, 110ms and 150ms
SOUND	Select the sound options: ON, MUTE
MUTE FOLLOWS	Select the action that will be followed by mute: **INDEPENDENT** - the audio muting is independent of the FREEZE and BLANK functions **FREEZE** **BLANK** **FREEZE/BLANK** - when you FREEZE or BLANK the video, the audio will be muted (the MUTE function follows the FREEZE and the BLANK functions)
HDMI AUDIO IN	Select: **AUTOMATIC** - the embedded audio on the HDMI input is selected for an HDMI signal, or the analog audio input is selected if the input is not HDMI (for example, for a DVI input signal) **EMBEDDED** - the embedded audio in the HDMI signal is selected **ANALOG** - the analog audio input is selected

HDMI AUDIO IN is enabled only when one of the HDMI inputs is selected.

6.2.4 The OSD Menu

Parameter	Function
H POSITION	Set the horizontal position of the OSD (from 0 to 100)
V POSITION	Set the vertical position of the OSD (from 0 to 100)
TIMER	Set the timeout period in seconds (from 5 to 100)
BACKGROUND	Set the OSD background between 0 (solid black) and 8 (transparent)
DISPLAY	Select the information shown on the screen during operation: **ON** - the information is shown permanently **OFF** - the information is not shown **INFO** - the information is shown for a few seconds

6.3 Connecting to the VP-690 via RS-232

You can connect to the **VP-690** via an RS-232 connection using, for example, a PC. Note that a null-modem adapter/connection is not required.

To connect to the **VP-690** via RS-232, connect the RS-232 9-pin D-sub rear panel port on the **VP-690** unit via a 9-wire straight cable (only pin 2 to pin 2, pin 3 to pin 3, and pin 5 to pin 5 need to be connected) to the RS-232 9-pin D-sub port on your PC.

6.4 Controlling via the ETHERNET

You can connect the **VP-690** via the Ethernet, using a crossover cable (see Section 6.4.1) for direct connection to the PC or a straight through cable (see Section 6.4.2) for connection via a network hub or network router.

After connecting the Ethernet port, you have to install and configure your Ethernet Port. For detailed instructions, see the “Ethernet Configuration (FC-11) guide.pdf” file in the technical support section on our Web site.

6.4.1 Connecting the ETHERNET Port Directly to a PC (Crossover Cable)

You can connect the Ethernet port of the **VP-690** to the Ethernet port on your PC, via a crossover cable with RJ-45 connectors.

This type of connection is recommended for identification of the factory default IP Address of the **VP-690** during the initial configuration.

After connecting the Ethernet port, configure your PC as follows:

1. Right-click the My Network Places icon on your desktop.
2. Select **Properties**.
3. Right-click Local Area Connection Properties.
4. Select **Properties**.
   The Local Area Connection Properties window appears.
5. Select the Internet Protocol (TCP/IP) and click the **Properties** Button (see Figure 4).

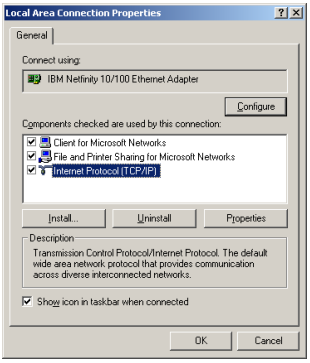


Figure 4: Local Area Connection Properties Window

6. Select Use the following IP Address, and fill in the details as shown in Figure 5.
7. Click **OK**.

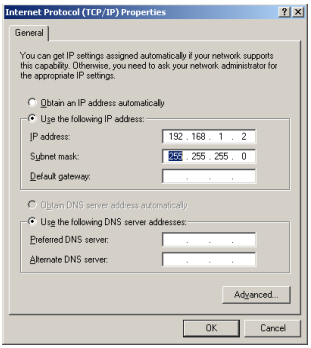

Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 1 . 2
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Figure 5: Internet Protocol (TCP/IP) Properties Window

6.4.2 Connecting the ETHERNET Port via a Network Hub (Straight-Through Cable)

You can connect the Ethernet port of the **VP-690** to the Ethernet port on a network hub or network router, via a straight-through cable with RJ-45 connectors.

6.5 Controlling via the Infrared Remote Control Transmitter

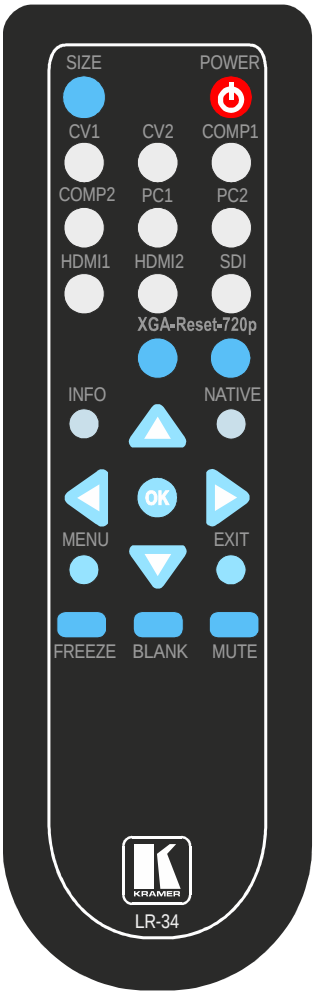


Figure 6: Infrared Remote Control Transmitter

Keys	Function
SIZE	Set the size of the image displayed
POWER	Turn the **VP-690** ON or OFF OFF in this case means that the unit is in standby mode
CV1	Select the composite video 1 input
CV2	Select the composite video 2 input
COMP1	Select the component video 1 input
COMP2	Select the component video 2 input
PC1	Select the UXGA 1 input
PC2	Select the UXGA 2 input
HDMI1	Select the HDMI1 input
HDMI2	Select the HDMI2 input
SDI	Select the SDI input
XGA Reset	Reset the resolution to XGA
720p Reset	Reset the resolution to 720p
INFO	Displays the selected input, the input and output resolutions and the firmware versions on the OSD
NATIVE	Select the output resolution via the EDID of the connected HDMI monitor
	Four navigation keys Left and right arrow keys also function as output volume control
OK	Press to accept changes
MENU	Enter the OSD menu
EXIT	EXIT the menu
FREEZE	Freeze/unfreeze the output video image
BLANK	Toggle between a blank screen (blue or black screen) and the display
MUTE	Toggle between muting (blocking out the sound) and enabling the audio output

7 Technical Specifications

INPUTS:	1 3G-HD-SDI on a BNC connector 2 HDMI connectors (HDMI, HDCP version 1.1) 2 VGA on a 15-pin HD connector 2 composite video on RCA connectors 2 component video each on 3 RCA connectors 2 HDMI, 2 PC, 2 COMP, 1 CV 1SDI unbalanced stereo audio on terminal block connectors	
OUTPUTS:	1 3G-HD-SDI on a BNC connector 1 RGBHV on 5 BNC connectors 1 HDMI connector (HDMI, HDCP version 1.1) 1 VGA on a 15-pin HD connector 1 S/PDIF on an RCA connector 1 analog stereo audio on 2 RCA connectors	
MAX. OUTPUT LEVEL:	VIDEO: 0.7Vpp	AUDIO: 3.4Vpp @1kHz
BANDWIDTH (-3dB):	VIDEO: UXGA	AUDIO: 22.5kHz
OUTPUT RESOLUTIONS:	480i, 480p, 720p60, 1080i60, 1080p60, 576i, 576p, 720p50, 1080i50, 1080p50, NATIVE, VGA, SVGA, XGA, SXGA, UXGA, WXGA, WSXGA, WUXGA, 1280x800, WXGA+, SXGA+, 1600x900, 2048x1080@50, 2048x1080@60	
S/N RATIO:		AUDIO: 87.8dB @1kHz, “A” weighting
CROSSTALK (all hostile):	VIDEO: -54dB	AUDIO: -70dB @20kHz
CONTROLS	Input selector buttons: CV1, CV2, component 1, component 2, PC 1, PC 2, HDMI 1, HDMI 2, SDI. Blank, mute, freeze, reset to XGA/720p, panel lock. Menu functions: menu, enter, menu arrows. RS-232, Ethernet, IR	
COUPLING	VIDEO: DC	AUDIO: AC
AUDIO THD + NOISE:	0.015% @1kHz, “A” weighting	
AUDIO 2nd HARMONIC:	0.01% @1kHz	
POWER SOURCE:	100-240V AC, 29VA max.	
DIMENSIONS:	19-inch (W), 7-inch (D) 1U (H) rack mountable	
WEIGHT:	2.7kg (6lbs) approx	
ACCESSORIES:	Power cord, rack ears, IR remote control transmitter	
Specifications are subject to change without notice at http://www.kramerelectronics.com		

7.1 Default Communication Parameters

RS-232 Communication Protocol	
Baud Rate:	9600
Data Bits:	8
Stop Bits:	1
Parity:	None
Command Format:	HEX
Example (Select HDMI1 input):	Y■0■26■CR
Ethernet	
IP Address:	192.168.1.39
TCP Port Number:	5000
Network Mask:	255.255.255.0
Default Gateway:	192.168.1.1

8 RS-232 Communication Protocol

The following is the COM port setting:

Baud Rate: 9600bps
Parity: None
Data Bits: 8bits
Stop Bits: 1bit
Set CTS Mode: Off
Set XON/XOFF: Off

Character Symbols Definitions	
Symbol	**Meaning**
■	Space
[CR]	Carriage Return, ASCII code 0x0D
[LF] or >	Line Feed, ASCII code 0x0A

Set and Get Command

Set Command:

Type in : Y■Control_Type■Function■Param■CR

Reply: Z■Control_Type■Function■Param■CRDone>CR

Get Command:

Type in : Y■Control_Type■Function■CR

Reply: Z■Control_Type■Function■Param■CR

Example:

Example 1: set brightness value as 32

Send: Y■1■16■32[CR]

Reply: Z■1■16■32[CR][LF]

Example 2: get current output resolution. (2 = SVGA)

Send: Y■4■21[CR]

Reply: Z■4■21■2[CR][LF]

Control Type	Function	Param (for Set)	Function Description	Comment
0	0	N/A	SIZE button on remote control	
0	1	N/A	POWER button on remote control	
0	2	N/A	FREEZE button on remote control	
0	3	N/A	480p button on remote control	
0	4	N/A	576p button on remote control	
0	5	N/A	720p button on remote control	
0	6	N/A	1080i button on remote control	
0	7	N/A	1080p button on remote control	
0	8	N/A	VGA button on remote control	
0	9	N/A	SVGA button on remote control	
0	10	N/A	XGA button on remote control	
0	11	N/A	SXGA button on remote control	
0	12	N/A	WXGA button on remote control	
0	13	N/A	UXGA button on remote control	
0	14	N/A	INFO button on remote control	
0	15	N/A	UP button on remote control	
0	16	N/A	NATIVE button on remote control	
0	17	N/A	LEFT button on remote control	
0	18	N/A	OK button on remote control	
0	19	N/A	RIGHT button on remote control	
0	20	N/A	MENU button on remote control	
0	21	N/A	DOWN button on remote control	
0	22	N/A	EXIT button on remote control	
0	23	N/A	AV 1 button on remote control	
0	25	N/A	COMP1 button on remote control	
0	26	N/A	HDMI1 button on remote control	
0	27	N/A	HDMI2 button on remote control	
0	28	N/A	COMP2 button on remote control	
0	29	N/A	PC 1 button on remote control	
0	30	N/A	BLANK button on remote control	

Control Type	Function	Param (for Set)	Function Description	Comment
0	31	N/A	MUTE button on remote control	
0	33	N/A	Auto adjust	FW V6.12
0	34	N/A	AV2 button on remote control	
0	35	N/A	PC2 button on remote control	
0	38	N/A	SDI in button on remote control	
1: Set 2: Get	4	0~100	Color: Red	
1: Set 2: Get	5	0~100	Color: Green	
1: Set 2: Get	6	0~100	Color: Blue	
1: Set 2: Get	16	0~100	Brightness	
1: Set 2: Get	17	0~100	Contrast	
1: Set 2: Get	25	0~100	Hue	
1: Set 2: Get	26	0~100	Sharpness	
1: Set 2: Get	29	0~100	Saturation	
1 : SET 2 : GET	33	0~100	Set an absolute volume for Output	
1 : SET 2 : GET	34	0~100	Set an absolute volume for Input	
1: Set 2: Get	41	0~100	OSD Setting :H-Position	
1: Set 2: Get	42	0~100	OSD Setting: V-Position	
1: Set 2: Get	43	0~100	OSD Timeout	
1: Set 2: Get	44	0~8	OSD Background	
1: Set 2: Get	50	0~3	NR (Noise Reduction)	0: Off 1: Low 2: Mid 3: High
1: Set 2: Get	51	0~3	Audio delay	0: Off 1: 40ms 2: 110ms 3: 150ms
1: Set 2: Get	52	0~2	HDMI AUDIO IN	0 : AUTOMATIC 1 : EMBEDDED 2 : ANALOG
1: Set 2: Get	84	0~1	Auto Sync Off	0 : OFF (FW:6.14) 1 : ON

Control Type	Function	Param (for Set)	Function Description	Comment
3: Set 4: Get	0	1~11	Select Input Source	1: AV 1 2: AV 2 3: COMP1 4: COMP2 5: PC 1 6: PC 2 7: HDMI1 8: HDMI2 11: SDI
3: Set 4: Get	1	0~5	Size	0: Full 1: Panscan 2: Overscan 3: Underscan 4: Letterbox 5: Underscan2
3: Set 4: Get	21	0~24	Output Resolution	0: Native 1: VGA 2: SVGA 3: XGA 4: SXGA 5: UXGA 6: 480i 7: 480p 8: 720p60 9: 1080i60 10: 1080p60 11: 576i 12: 576p 13: 720p50 14: 1080i50 15: 1080p50 16: WXGA 17: WSXGA 18: WUXGA 19: 1280x800 20: WXGA+ (1440X900) 21: SXGA+ (1400X1050) 22: 1600x900 23: 2048x1080/50 24: 2048x1080/60
3: Set	23	1	Factory Reset	
6: Set 7: Get	0	0~2	Power	0: Power Down 1: Power On 2: Reboot
6: Set 7: Get	1	0~1	Freeze	0: Off 1: On
6: Set 7: Get	2	0~1	Blank	0: Off 1: On
6: Set 7: Get	3	0~1	Mute	0: Off 1: On

Control Type	Function	Param (for Set)	Function Description	Comment
6: Set 7: Get	4	0~1	Key lock	0: Off 1: On
6 : set 7 : get	140	0~1	Auto Tune (under fine tune)	0 : Clear Auto Tune 1 : Set Auto Tune

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What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

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SAFETY WARNING
Disconnect the unit from the power supply before opening and servicing